

**KENTUCKY RETIREMENT SYSTEMS
SPECIAL CALLED INVESTMENT COMMITTEE MEETING
AGENDA
Thursday, July 25th, 2019
12:30 p.m.**

12:30PM	Call to Order
12:31PM	Approval of Minutes*- May 16th, 2019 and June 18, 2019
12:32PM	Holding of transitional funds recommendation* – Rich Robben
1:00PM	Adjourn

** All times are approximations, one or more items on this agenda may be discussed in closed session.*

**MINUTES OF MEETING
KENTUCKY RETIREMENT SYSTEMS
QUARTERLY INVESTMENT COMMITTEE
MAY 16, 2019, 9:00 A.M., E.T.
1270 LOUISVILLE ROAD, FRANKFORT, KENTUCKY 40601**

At the May 16, 2019 Quarterly Investment Committee Meeting, the following Committee members were present: John Farris (Chair), William Cook, Kelly Downard, Dave Harris, Sherry Kremer (arrived at 9:02 a.m.), Matthew Monteiro, Jerry Powell and Keith Peercy. Trustee Betty Pendergrass was also present. Staff members present were David Eager, Rich Robben, Anthony Chiu, Joe Gilbert, Ann Case, Shaun Case, Jared Crawford, Kristen Coffey, Natalie Young, Connie Davis, Joe Bowman, Victoria Hale, Phillip Cook and Alane Foley. Chris Tessman and Chris Shelby from Wilshire Associates were also present.

Mr. Farris called the meeting to order and Ms. Alane Foley called roll.

Mr. Farris introduced the agenda item *Approval of Minutes- February 12, 2019*. Mr. Downard moved and was seconded by Mr. Powell to approve the minutes as presented. The motion passed unanimously.

Mr. Farris introduced agenda item *Standard Reports and Performance*. Mr. Rich Robben provided an overview of investment performance. This was provided for informational purposes only.

Mr. Robben then notified the Committee of an error by BNY Mellon recently discovered by staff with the composition of several plan level performance benchmarks. He stated that he had directed BNY to fix the issue, and requested the BNY restate the benchmark performance going back to July 1st, 2018. Mr. Robben also recommended that the Committee approve a change to the Fixed Income benchmarks used for all plans to bring those benchmarks in line with recent changes to our Fixed Income investments. His suggestion is to benchmark the Core Fixed Income allocation to the Bloomberg Barclays US Aggregate Index, and to benchmark the Specialty Credit / High Yield allocation to a 50-50 blend of the Bloomberg Barclays US High Yield Index, and the S&P

LSTA Leveraged Loan Index. After discussion, Mr. Downard moved and was seconded by Mr. Powell to approve the change to the benchmarks, and making that change retroactive to January 1, 2019. The motion passed unanimously.

Mr. Farris introduced agenda item *New Fund Recommendation- Middle Ground I*. Mr. Anthony Chiu introduced Mr. John Stewart from Middle Ground Partners. Mr. Stewart provided an overview of the firm and the investment to the committee. Due to the fact that Middle Ground is a Kentucky based company, Mr. Harris voiced concerns for transparency during the due diligence process. He instructed KRS investment staff and Wilshire to obtain background checks and conflict of interest statements. Mr. Harris moved and was seconded by Mr. Monteiro to invest up to \$75 mil in Middle Ground Partners I. The motion passed unanimously.

There being no further business, Mr. Powell moved and was seconded by Mr. Harris to adjourn the meeting at 9:55 a.m. The next meeting of the Investment Committee is scheduled for 9:00 a.m. August 27, 2019. Copies of all documents presented are incorporated as part of the minutes of the Investment Committee meeting held May 16, 2019.

CERTIFICATION

I do certify that I was present at this meeting and I have recorded above the action of the Committee on the various items considered by it at this meeting. Further, I certify that all requirements of KRS 61.805-61.850 were met in connection with this meeting.

Recording Secretary

I, as Chair of the Investment Committee of the Board of Trustees of the Kentucky Retirement Systems, do certify that the Minutes of the meeting held on May 16, 2019 were approved by the Investment Committee on June 18, 2019.

Committee Chair

I have reviewed the Minutes of the Investment Committee Meeting on May 16, 2019 for form, content, and legality.

Office of Legal Services

**RECORD OF MEETING
KENTUCKY RETIREMENT SYSTEMS
SPECIAL CALLED INVESTMENT COMMITTEE
JUNE 18, 2019, 9:00 A.M., E.T.
1270 LOUISVILLE ROAD, FRANKFORT, KENTUCKY 40601**

At the June 18, 2019 Special Called Investment Committee Meeting, the following Committee members were present: Dave Harris (Chair), Kelly Downard, Sherry Kremer, and Keith Peercy. Staff members present were David Eager, Mark Blackwell, Rich Robben, Anthony Chiu, Andy Kiehl, Joe Gilbert, Ann Case, Shaun Case, Kristen Coffey, Carol Johnson, Joe Bowman, Victoria Hale, Phillip Cook and Alane Foley. Also present were Chris Tessman and David Lindberg from Wilshire Associates, Michele Hill, Larry Totten, Neil Ramsey and Prewitt Lane.

Mr. Harris called the meeting to order and Ms. Alane Foley called roll. There being no quorum present, it was determined that the meeting proceed for informational purposes only, and that no business, or committee action or recommendations be considered.

Mr. Harris introduced the agenda item *Approval of Minutes- May 16, 2019*. Mr. Harris asked that a few amendments be made to the minutes. These will be completed, considered and published for approval at the next meeting.

Mr. Robben provided introductions: Chris Lancaster, summer intern from the University of Louisville; Carol Johnson, new Administrative Assistant in the Louisville office.

Ms. Ann Case introduced Isabella Martin, summer intern from the University of Louisville. She will be working with investment accounting.

Mr. Harris introduced agenda item *IPS Review*. Mr. Robben and David Lindberg from Wilshire advised that a review of the IPS is now taking place and an updated version will be presented at the August Investment Committee meeting for review and approval. This was provided for informational purposes only.

Mr. Harris introduced agenda item *New Fund Recommendation*. Mr. Gilbert provided an overview of three managers in attendance to make presentations: JP Morgan Asset Management, Pzena Investment Management, and Next Century Growth Investors. No recommendations would be made or approved due to the lack of a quorum.

Mr. Gilbert introduced Tom Leventhorpe and Jeff Fox from JP Morgan Asset Management. They provided a fund overview and answered questions from Committee members.

Mr. Gilbert introduced Caroline Cai and Valerie Arnold from Pzena Investment Management. They provided a fund overview and answered questions from Committee members.

Mr. Gilbert introduced Tom Press, Peter Capouch and Bob Scott from Next Century Growth Investors. They provided a fund overview and answered questions from Committee members.

The meeting adjourned at 12:45 p.m. The next regular meeting of the Investment Committee is scheduled for 9:00 a.m. August 27, 2019. Copies of all documents presented are incorporated as part of the record of the Investment Committee informational meeting held June 18, 2019.

CERTIFICATION

I do certify that I was present at this informational meeting and I have recorded above the various items presented at this meeting. Further, I certify that all requirements of KRS 61.805-61.850, to the extent applicable, were met in connection with this meeting.

Recording Secretary

I have reviewed the record of the Investment Committee Informational Meeting on June 18, 2019 for form, content, and legality.

Office of Legal Services



KENTUCKY RETIREMENT SYSTEMS

INVESTMENTS



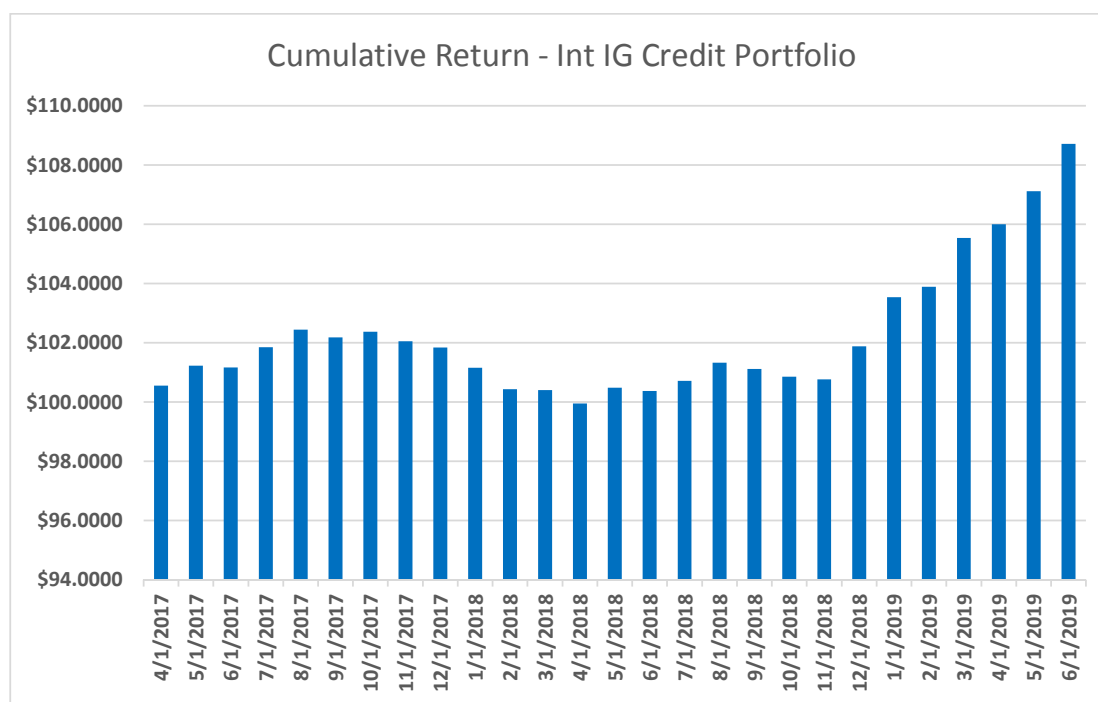
To: Investment Committee – Kentucky Retirement Systems

From: Rich Robben, CIO

Date: July 25, 2019

Subject: Transitional Cash Recommendation and Sale of Intermediate Credit CTF Holding

In 2017 the Investment Committee designated an Intermediate Credit Collective Trust vehicle as the temporary holding investment for what we refer to as transitional cash. While that choice does provide a degree of safety from credit risk, it also introduces a degree of interest rate risk, having a duration of approximately 4 years. While the investment was fairly unremarkable for most of 2017 and 2018 (returning less than cash), it has dramatically increased in value during 2019 as interest rates have fallen to within 40 bps of the all-time low in yield on the US 10 year treasury.



Given that the duration of this holding was “extra”, meaning it was over and above the targeted duration of our Core Fixed Income allocation, Staff sold the majority of our holdings on July 12th 2019. This sale has resulted in KRS carrying a daily cash balance of just over \$1B since the sale settled on July 17th.

Staff feels that going forward, the best option for our excess cash balances would be to utilize our existing Lord Abbett Short Credit account. This account has a duration of less than half of the Intermediate Credit

Fund we previously held, is less volatile, but produces similar returns. On a fee basis, the Lord Abbett is slightly more expensive than the Intermediate Credit Funds we have been using, at 9bps annually. (Versus approximately 3.5bps)

Motion: Designate the existing Lord Abbett Short Credit portfolios as the transitional cash holding accounts, giving Staff full authority to move funds into and out of these accounts at their discretion as necessary. Any cash movements within the Lord Abbett accounts will be reported to the Investment Committee at the next scheduled meeting.

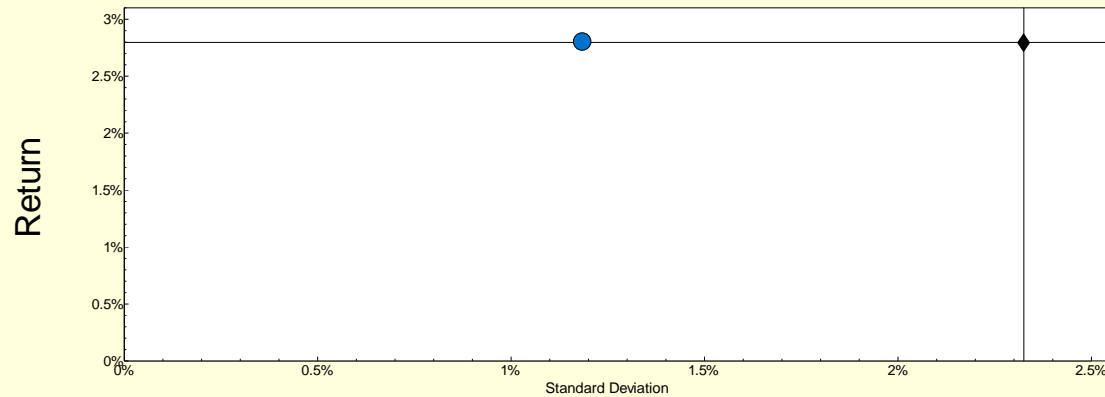
Zephyr StyleADVISOR

Zephyr StyleADVISOR: Lord, Abbett and Co.

Manager Risk/Return

Single Computation

June 2014 - May 2019



Risk-Return Table

June 2014 - May 2019: Annualized Summary Statistics

	Return (%)	Std Dev (%)	Downside Risk (%)	Beta vs. Market	Alpha vs. Market (%)	R-Squared vs. Market (%)	Sharpe Ratio	Tracking Error vs. Market (%)	Observs.
Lord, Abbett & Co: Short Duration (Gross)	2.81	1.18	0.79	0.3947	1.69	60.11	1.6921	1.5938	60
Bloomberg Barclays U.S. Intermediate Credit	2.80	2.33	1.62	1.0000	0.00	100.00	0.8570	0.0000	60

Past performance is not indicative of future results. Indices are unmanaged, do not reflect the deduction of fees or expenses and are not available for direct investment.

Performance data is based on the strategy's institutional composite. All information provided is supplemental to the strategy's institutional composite presentation, which is included at the end of this report, and is subject to change.

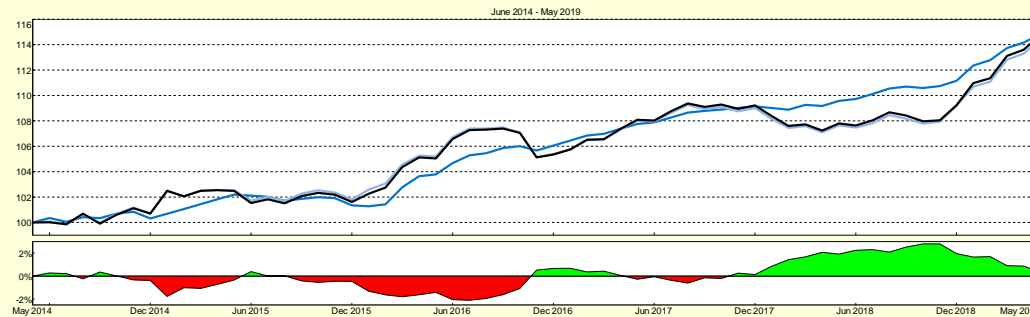
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Manager Performance

Single Computation



Performance Table

June 2014 - May 2019. Single Computation

	Portfolio Performance			vs. Bloomberg Barclays U.S. Intermediate Credit					
	Annualized Return (%)	Cumulative Return (%)	Std Dev (%)	Annualized Excess Return (%)	Cumulative Excess Return (%)	Info Ratio	Significance Level (%)	Explained Variance (%)	Tracking Error (%)
Lord, Abbett & Co: Short Duration (Gross)	2.81	14.84	1.18	0.01	0.06	0.01	50.55	60.11	1.59

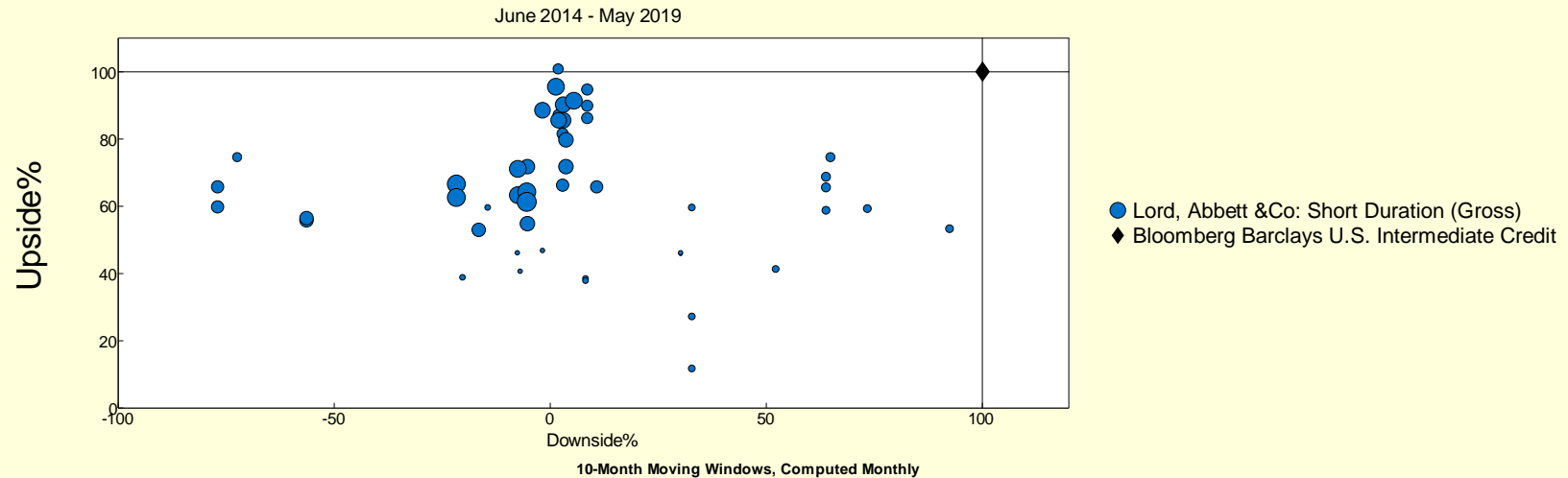
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Up/Down Table

June 2014 - May 2019. Single Computation

	# of Months		Average Return (%)		Average Return (%) vs. Market		Month (%)		1-Year (%)		Market Benchmark (%)		
	Up	Down	Up	Down	Up Market	Down Market	Best	Worst	Best	Worst	Up Capture	Down Capture	R-Squared
Lord, Abbett & Co: Short Duration (Gross)	46	14	0.36	-0.20	0.38	-0.05	1.32	-0.55	5.34	0.37	63.4	11.2	60.11
Bloomberg Barclays U.S. Intermediate Credit	39	21	0.60	-0.44	0.60	-0.44	1.78	-1.80	6.48	-1.21	100.0	100.0	100.00

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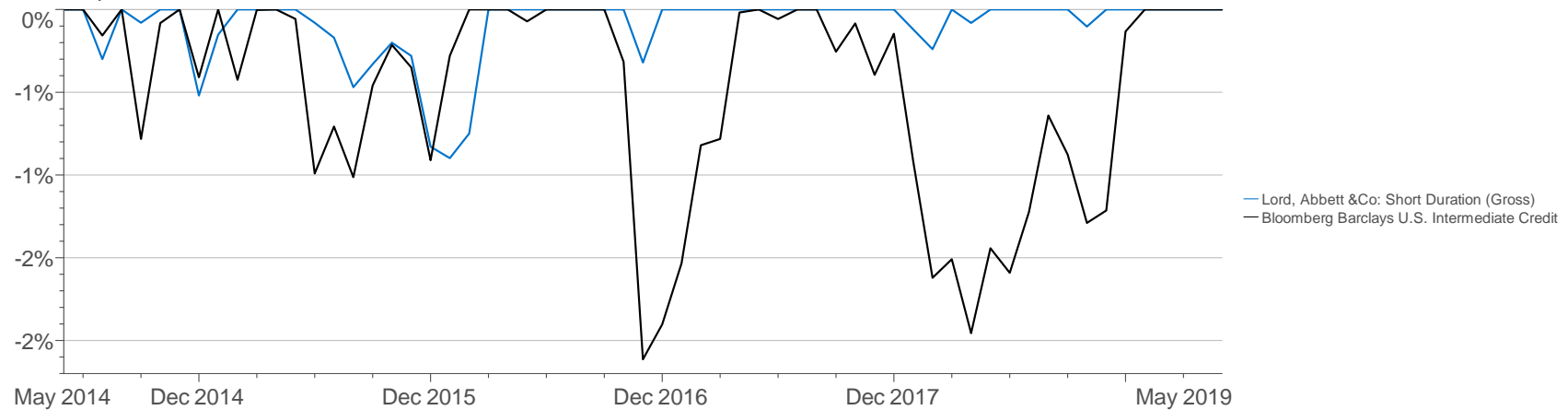
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Drawdown
June 2014 - May 2019



Drawdown Table

June 2014 - May 2019: Summary Statistics

	Max Drawdown	Max Drawdown Begin Date	Max Drawdown End Date	Max Drawdown Length	Max Drawdown Recovery Date	Pain Index	Pain Ratio	Omega (MAR = 0.00%)	Gain to Loss Ratio	High Water Mark Date	To High Water Mark
Lord, Abbett & Co: Short Duration (Gross)	-0.90%	Jun 2015	Jan 2016	8	Mar 2016	0.10%	20.29	5.94	1.81	May 2019	0.00%
Bloomberg Barclays U.S. Intermediate Credit	-2.11%	Oct 2016	Nov 2016	2	May 2017	0.50%	4.02	2.49	1.34	May 2019	0.00%

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Relative Statistics

June 2014 - May 2019: Summary Statistics

	Return	Standard Deviation	Sharpe Ratio	Maximum Drawdown	Maximum Drawdown Begin Date	Maximum Drawdown End Date	Pain Index	Pain Ratio	Excess Return vs. Market	Tracking Error vs. Market	Batting Average vs. Market	Information Ratio vs. Market	Up Capture vs. Market	Down Capture vs. Market	Alpha vs. Market	Beta vs. Market	R-Squared vs. Market	Treynor Ratio vs. Market
Lord, Abbett & Co: Short Duration (Gross)	2.81%	1.18%	1.69	-0.90%	Jun 2015	Jan 2016	0.10%	20.29	0.01%	1.59%	48.33%	0.01	63.37%	11.18%	1.69%	0.39	60.11%	5.21
Bloomberg Barclays U.S. Intermediate Credit	2.80%	2.33%	0.86	-2.11%	Oct 2016	Nov 2016	0.50%	4.02	0.00%	0.00%	0.00%	0.00	100.00%	100.00%	0.00%	1.00	100.00%	1.99

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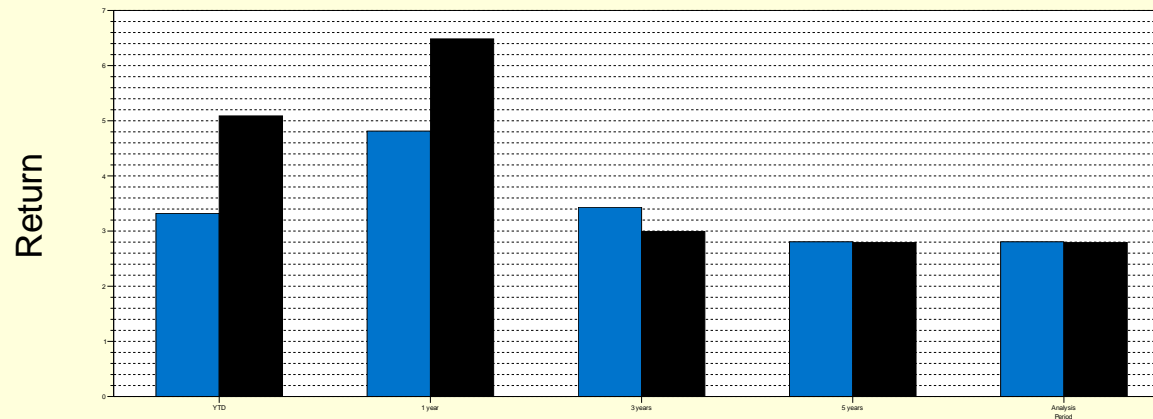
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Manager vs Benchmark: Return through May 2019

(not annualized if less than 1 year)



■ Lord, Abbett & Co. Short Duration (Gross)
 ■ Bloomberg Barclays U.S. Intermediate Credit

Manager vs Benchmark: Return through May 2019

(not annualized if less than 1 year)

	YTD	1 year	2 years	3 years	4 years	5 years	Analysis Period
Lord, Abbett & Co. Short Duration (Gross)	3.32%	4.81%	3.24%	3.43%	2.96%	2.81%	2.81%
Bloomberg Barclays U.S. Intermediate Credit	5.09%	6.48%	3.05%	3.00%	2.87%	2.80%	2.80%

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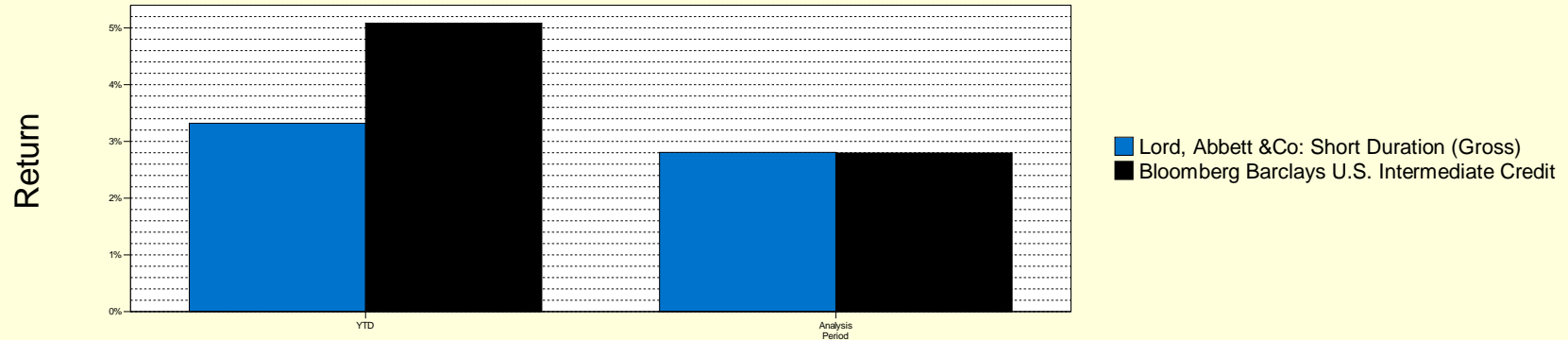
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Calendar Year Return

As of May 2019



Calendar Year Return

As of May 2019

	YTD	Analysis Period
Lord, Abbett & Co. Short Duration (Gross)	3.32%	2.81%
Bloomberg Barclays U.S. Intermediate Credit	5.09%	2.80%

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Correlation Matrix: Returns vs. Bloomberg Barclays U.S. Intermediate Credit

June 2014 - May 2019

	(1)	(2)
1) Lord, Abbett &Co: Short Duration (Gross)	1.00	
2) Bloomberg Barclays U.S. Intermediate Credit	0.78	1.00

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Zephyr StyleADVISOR

StyleAdvisor is not meant to replace a thorough analysis by a consultant. You and your consultant best understand the overall goals of your investment program, and how a particular portfolio may or may not help you accomplish these goals. StyleADVISOR is meant to alert you to situations where you and your consultant may wish to consider generic portfolios.

Benchmark – An index or combination of indices used to characterize a manager.

Beta Benchmark – When StyleADVISOR performs basic or general style analyses, it attempts to track the manager with a style benchmark formed from the palette of indices. For comparison purposes, it also attempts to track the manager with a beta benchmark formed using the same rules and constraints as the style benchmark, except that the palette of indices for the beta benchmark consists only of the market benchmark. It is a single-parameter beta of excess returns of a manager over T-Bills against excess returns of the market benchmark over T-Bills.

Budget Constraint – The requirement that the weights in a benchmark add to 100%. Since only governments are exempt from the budget constraint, StyleADVISOR places this restriction on all style benchmarks, beta benchmarks, and completeness funds.

Index – A portfolio (or the return of series of that portfolio) formed by a quantitative or otherwise rigorously specified, publicly disclosed, process. Many index portfolios can be acquired for very low management fees.

Manager – In StyleADVISOR, a manager is a portfolio or return series to be analyzed. A manager may be a portfolio managed by an investment advisor or a mutual fund. More generally, a manager may be any return series derived from portfolios, securities, or asset such as indices, commodities, futures, or economic time series.

Manager Style Graph – The manager style graph is a two-dimensional graph displaying manager style against a style basis.

Market Benchmark – The market benchmark is a single fund or index specified in the Analysis Information dialog.

Optimization – The mathematical process by which StyleADVISOR determines style and beta benchmarks, as well as completeness fund portfolios. More precisely, the program uses quadratic optimization with linear constraints.

Palette of Indices – The palette of indices (or palette) is the set of indices that can be used to track a manager or managers, or to form a custom core portfolio. The style basis is automatically included in the palette.

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Style – A persistent, discernible factor in manager returns. In Style ADVISOR, styles are captured by generic indices. If a manager's return series is tracked well by a generic index's return series, then we have evidence that the style embodied by the index is being displayed by the manager.

Style Bias – A definition of a manager style graph consisting of indices and axis definitions based on those indices. The standard StyleADVISOR manager style graph is defined by four Russell style indices: the Russell large growth portfolio at the upper right, the large value portfolio at the upper left, the small value portfolio at the lower left, and the small growth portfolio is the lower right. These four indices (possibly with T-Bills) form the basic palette. Their placement implies that the vertical axis represents the capitalization of a manager placed on the graph, while the horizontal axis represents the value or growth orientation of the manager.

Style Benchmark – A style benchmark is a combination of palette indices that best tracks a manager in some time period. The style benchmark is established subject to constraints specified by the Run/Analyze Style command. For example, the style benchmark may be constrained to consist only of long holdings of palette indices.

For rolling windows, a style benchmark is computed for each window. The term style benchmark then means the concatenation of style benchmarks established for each window.

Tracking error – The standard deviation of the difference of two return series. Generally StyleADVISOR tries to minimize the tracking error between manager and a style benchmark, or between an overall benchmark and a plan sponsor's aggregate portfolio.

Trailing Window (Moving Window, Rolling Window) – A window consisting of some number of time periods of return data (specified in the Analysis Parameters dialog) that is moved along through time in monthly, quarterly, or annual jumps. Computations are done for each window. The analysis results are compiled from the computation results of all the window.

Rolling windows are used in style analysis to demonstrate how a portfolio has changed over time. In the Manager vs. Universe analysis, they serve to eliminate the recent good or bad performance biases associated with cumulative analyses.

Value (style) – The value style of investing is characterized by a view of a share of a company as a claim on the company's assets. Value investors attempt to find companies whose net asset value is greater than is reflected in their stock prices. In StyleADVISOR, value style investing is quantified by correlation with Russell (or other) value and growth indices. A manager whose returns correlate highly with one or more of Russell's value indices is characterized as a value manager.

Growth (style) – The growth style of investing is characterized by a view of a share of a company as a claim on the company's earnings. Growth investors attempt to find companies whose earnings growth will be greater than is reflected in their stock prices. In Style ADVISOR, growth style investing is quantified by correlation with Russell (or other) value and growth indices. A manager whose returns correlate highly with one or more of Russell's growth indices is characterized as a growth manager.

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